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Evaluations of the Census 2000 Partnership and Marketing Program

FINAL REPORT

Quality assurance procedures were applied throughout the creation of this report.

This topic report integrates findings and provides context and background for interpretation of results from Census 2000 evaluations, tests, and other research undertaken by the U.S. Census Bureau. It is part of a broad program, the Census 2000 Testing, Experimentation, and Evaluation program, designed to assess Census 2000 and to inform 2010 Census planning.

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Westat

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The Census 2000 Testing, Experimentation, and Evaluation Program provides measures of effectiveness for the Census 2000 design, operations, systems, and processes and provides information on the value of new or different methodologies. The results and recommendations from these analyses provide valuable information crucial to planning the 2010 Census. By providing measures of how well Census 2000 was conducted, this program fully supports the Census Bureau's strategy to integrate the 2010 planning process with ongoing Master Address File/TIGER enhancements and the American Community Survey. The purpose of the report that follows is to synthesize results from related Census 2000 evaluations, experiments, and other assessments to make recommendations for planning the 2010 Census. Census 2000 Testing, Experimentation, and Evaluation reports are available on the Census Bureau's Internet site at: http://www.census.gov/pred/www/.

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1. INTRODUCTION AND BACKGROUND

1.1 The Partnership and Marketing Program

In response to declining mail return rates (down from 87 percent in 1970, the first census with a large scale mailout/mailback operation, to 74 percent in 1990), the U. S. Census Bureau implemented a number of changes in design and operations for Census 2000. These included a greatly expanded outreach and promotion campaign, called the Partnership and Marketing Program (PMP), which for the first time included paid advertising and an enhanced Partnership Program, in an attempt to increase public awareness of the Census, to promote positive attitudes about the Census, and to increase or at least slow the decline in mail return rates, particularly among segments of the population traditionally more difficult to enumerate. Two primary concerns about the mail return rate made the expanded PMP appear worthwhile: (1) followup of nonresponse to the mail Census is very expensive and (2) responses received through the mail appear to be more complete and accurate than those obtained in followup efforts. PMP activities were also intended to increase the level and rate of cooperation with the Nonresponse Followup (NRFU) phase of Census 2000. Ultimately, a goal of the PMP was to help reduce the differential undercount across population groups.

The PMP included the following components:

- A paid advertising campaign;
- The Partnership Program;
- Promotions and Special Events;
- A media relations program; and
- The Direct Mail Pieces component.

Each of these components was new, expanded, or significantly modified from 1990. The paid advertising campaign, developed by Young and Rubicam (Y&R), was based on a likelihood to respond model of the United States population, called the Likelihood Spectrum™. Table 1 shows the relationship between the model and the goals of the advertising campaign. Y&R took as a proxy measure for this likelihood the number of civic activities an individual engaged in: most likely to respond are those participating in five or more civic activities, undecided or passive are those with one to four activities, and least likely are those with no civic activities.

Table 1: Y&R Likelihood Spectrum™: attitudes and role of advertising by segment

	Least likely to respond	Undecided/Passive	Most Likely to Respond
Attitudes Towards Census	Fear Distrust Completely unaware	Apathetic Not very familiar	Familiar Intend to participate
Role of Advertising	Lower resistance to pave way for community programs Motivate Educate Remind	Provide information Provide reason to complete Motivate Educate Remind	Reinforce positive behavior Instill sense of urgency Motivate Remind

Adapted from Wolter et. al., 2002

The Y&R campaign was further segmented by race and ethnic group, in particular targeting traditionally harder to enumerate populations: African-Americans, Hispanics, Asians, American Indians/Alaska Natives, and Native Hawaiians and other Pacific Islanders. The primary slogan for the campaign, selected to promote beliefs of personal and community benefits and stimulate return of the census form, was: "This is your future. Don't leave it blank." There were variations of this slogan for different race and ethnic groups.

The advertising campaign was divided into three phases, as shown in Table 2. Each phase was intended to have its own set of messages, in keeping with the goals shown in Table 2. A primary focus was to demonstrate the benefits to the individual and community of participation, and the cost of not participating. (U.S. Census Bureau, Decennial Management Division, undated)

Table 2: General media plans by phase*

	Education phase	Motivation phase	Nonresponse followup phase
Vehicles	Print Radio Television	Print Radio Television Out of home**	Radio Television
Time Period	November 1 to January 30	February 28 to April 9	April 17 to June 5
Activity Weeks	Broadcast: 9 weeks Print: 2 months	Broadcast: 6 weeks Print: 2 months Out of home: 2 months	Broadcast: 7 weeks

*For the Diverse America audience, those most likely to respond were not targeted during the education and nonresponse followup phases.
**"Out of home" media included posters, outdoor advertisements, and transit advertisements Adapted from Wolter et. al., 2002

The Partnership Program, greatly expanded for Census 2000, involved Census Bureau partnership specialists working with state, local and tribal governments, community groups, nongovernmental organizations, local media, and private sector industries. The objectives, as for the PMP overall, were (1) to increase the overall response rate for Census 2000, (2) to reduce the undercount of historically hard-to-enumerate populations, and (3) to communicate a consistent message to all Americans that re-enforced the paid advertising message and, in effect, closed the sale. (U.S. Census Bureau, Decennial Management Division, undated) The Partnership Program

employed some 690 partnership specialists around the country, working with about 140,000 partner organizations.

The Census Bureau provided materials to partners to help publicize the census and to educate and motivate partners' constituents, including posters and fact sheets, videos, articles for newsletters, press releases, sample forms, graphics, and promotional items. The Census Bureau made materials available in a number of different languages; in addition, many partners developed in-language educational and informational materials for their constiutents. The Census Bureau also provided instructional manuals for partners in a variety of settings to help them design programs to meet shared goals. Census Bureau staff also participated in partner activities. Partners, in turn, helped to publicize the census through a variety of media, organized educational and motivational community activities, and provided assistance in some census operations (Westat, 2001).

The Census in Schools (CIS) Program was a significant component of Promotions and Special Events, with the goal of teaching students about the census. A variety of teaching materials were made available to teachers, with the intention that students would take materials home and/or communicate with their parents about the importance of participating in the census (Macro International, 2002).Other major components of Promotions and Special Events were "How America Knows What America Needs," which assisted local elected officals in encouraging their communities to participate in the census, and the Census 2000 Road Tour, in which twelve Census Bureau vehicles traveled around the country during February through April 2000, setting up exhibits in local "high traffic" areas.The Census Bureau also focused on media relations during the census period to complement the other components of the PMP. The goal was to ensure that positive and educational stories about the census would appear in print and electronic media.

The Direct Mail component incorporated some significant changes from 1990 to 2000, based on methodological research in the intervening years. For Census 2000, both the Mailout/Mailback and Update/Leave universes received advance letters, telling them that the Census 2000 questionnaire would be coming; 1990 census operations did not include an advance letter. A 1992 Implementation Test of the effects of sending advance letters, including a stamp on the return envelope, and mailing reminder post cards found that each of these additional mail contacts with households resulted in higher overall response rates – 6.4 percent, 2.6 percent, and 8.0 percent respectively – and that the effects were additive within the test samples. The improvements for 1990 low response rate areas were somewhat smaller – 4.2 percent, 1.6 percent, and 5.7 percent (Clark et. al., 1993). Both the 1990 and 2000 censuses included reminder post cards; the stamp was used in neither, although both included prepaid return envelopes.

Another major change between 1990 and 2000 was prompted by a 1993 test of the effects of various kinds of motivational messages on response rates. Including the statement "Your Response is Required by Law" in a box on the outer envelope increased response rates by 9 to 11 percentage points overall as compared with approaches not using that phrase on the envelope, and 7 to 8 percentage points in 1990 low response areas (Dillman et. al., 1996). This statement

was included on the Census 2000 outer envelope; it had not been used previously in a decennial census.

Finally, the census questionnaire itself was redesigned to be more "respondent-friendly," using generally accepted design principles and focus group testing. This redesign was made possible by the use of the new technologies of optical scanning and character recognition. A Simplified Questionnaire Test in 1992 found that the respondent-friendly design increased the return rate by 3.4 percent overall as compared with the 1990 Short Form, and by 7.5 percent in low response areas (Dillman et. al., 1993).

1.2 PMP Evaluation Activities

The Census Bureau commissioned three major research evaluations of PMP activities:

- The Partnership and Marketing Program Evaluation (PMPE), a series of three general population surveys conducted and analyzed by the National Opinion Research Center (NORC), which was intended to evaluate the effects of most of the PMP components;
- The Survey of Partners, a sample survey of organizations enlisted as partners for Census 2000, focusing on the Partnership Program and conducted and analyzed by Westat; and
- An evaluation of the Census in Schools Program, based on a survey of primary and secondary school teachers, conducted and analyzed by Macro International.

Another important evaluation study was the Census Monitoring Survey (CMS), a weekly survey of the general population conducted just before and during the Census 2000 mailout/mailback by InterSurvey (now known as Knowledge Networks). The CMS was privately commissioned and funded.

Figure 1 in the Appendix shows the timing of Census 2000 operations, paid advertising, and evaluation study activities. The advertising campaign was timed so as to achieve the objectives outlined in Table 1, and the PMPE and CMS surveys were timed to assess the effects of the advertising campaign (as well as other PMP activities). The PMPE survey Wave 1 was fielded before the education phase of the advertising campaign to measure "baseline" awareness and attitudes; Wave 2 was largely between the education and motivation phases, and the start of Wave 3 coincided with the NRFU phase of both Census 2000 operations and the advertising campaign. The CMS was conducted essentially between Waves 2 and 3 of the PMPE survey.

Partnership activities had a longer time frame than the advertising campaign. The planning and education phases, focusing on developing the partnerships, stretched from late 1996 through late 1999. Motivation activities began in late 1999 or early 2000, reached a peak between the mailout and Census Day (April 1), and continued through the NRFU. The Partnership Evaluation field period was October 2000 through March 2001, considerably after PMP activities had concluded.

The Census in Schools Program conducted mailings to teachers and principals March through September 1999. All schools received at least one teaching kit, and invitational packets were sent to elementary school teachers and secondary school math and science teachers in historically hard-to-enumerate (HTE) areas. During the census period, take-home packets were mailed to all

elementary school teachers and middle school social studies teachers. The CIS survey was conducted in the Spring of 2000.

The advertising campaign was tested during the Census 2000 Dress Rehearsal in 1998, in Sacramento CA, Columbia SC and eleven surrounding counties, and Menominee WI. A pre-/post-test survey to assess the effects of the campaign in Sacramento and South Carolina was conducted by Westat and analyzed by Roper-Starch.

Besides these major evaluations by contractors and other non-Census groups, there were a variety of other evaluation activities conducted both by Census Bureau and contractor staff that looked at specific components of the PMP. Some of these activities will be cited in the remainder of the report.

1.3 Previous Evaluations of Marketing and Outreach Efforts

The PMPE and Census 2000 Dress Rehearsal surveys follow the general form of two previous "pre/post" evaluation surveys: the Knowledge, Attitudes, and Practices (KAP) Survey in 1980, and the 1990 Outreach Evaluation Survey (OES). Each was designed to assess the effects of census marketing and outreach efforts on the American public's awareness, knowledge and attitudes, and behavior with regard to the Decennial Census.

This report will cite findings from these two surveys by way of historical comparison, where comparable items were used. It should be noted that there are significant differences in the timing of survey waves across the various evaluation studies, so interpretation of differences in results must be viewed cautiously. The last two rows of Figure 1 show the approximate dates of the 1980 KAP and 1990 OES.

Wave 1 (the "pre" phase) of each of these surveys occurred in late January and early February. Wave 1 of the PMPE was much earlier because the advertising campaign in 2000 included an education phase that happened much earlier than such efforts in 1990 or 1980. While the three Wave 1 surveys are roughly comparable in their relationship to planned outreach and publicity efforts, they may not be comparable for some measures because of the differences in timing and because of external events such as news reports related to the census.

Wave 2 of the 1980 KAP occurred after the outreach and publicity campaign was well under way, but concluded just before the mailout/mailback operation. In contrast, Wave 2 of the 1990 OES was conducted after the mailout/mailback and during the NRFU. The 2000 PMPE's Wave 2 was conducted before the mailout/mailback, so is somewhat comparable to Wave 2 of the 1980 KAP, although it is not as close to the mailout/mailback operations. Timing of Wave 3 of the PMPE is comparable to that of Wave 2 of the 1990 OES.

1.4 Other Related Surveys

Besides the surveys conducted to evaluate marketing and outreach efforts, the Census Bureau commissioned other research to examine issues of attitudes and behaviors related to participation in the census. In 1999, NORC conducted a Knowledge, Attitudes, and Perceptions Survey,

known as KAP-1. During the 1990s, there were several surveys measuring public attitudes about privacy and confidentiality around the census, reviewed in a companion Topic Report by Eleanor Singer. The Survey of 1990 Census Participation (SCP), conducted by NORC in June and July following census operations, was designed to assess the reasons for the decline in response from 1980 to 1990. A roughly comparable survey was the 1980 Applied Behavior Analysis Survey (ABAS), conducted in April during census operations. Limited results from these surveys will be cited to demonstrate historical trends or provide reinforcement or contrast to findings from the 2000 evaluation studies.

2. SUMMARY AND ASSESSMENT OF EVALUATION ACTIVITIES

By most outcome measures, Census 2000 was a success. The mail return rate, defined as the number of mail returns received before the cutoff date for the NRFU divided by the number of occupied housing units in mailback areas, was 74.1 percent, almost identical to that of the 1990 Census (1990 rates cited in Stackhouse and Brady, 2002) and ending the sharp decline between 1970 and 1990. The final mail response rate, defined as the percentage of the NRFU-eligible households returning forms, was 67 percent, up from 65 percent in 1990 and well above the expected rate of 61 percent (U.S. Census Bureau, http://rates.census.gov). The NRFU effort finished almost two weeks ahead of schedule. Finally, in 1990 the net undercount of the U.S. population was estimated at 1.6 percent overall, and up to 5 percent for various racial and ethnic groups (U.S. Census Bureau, http://www.census.gov/dmd/www/pdf/underus.pdf). For 2000, various estimates (U.S. Census Bureau, 2003) indicate a net overcount of 0.36 to 1.12 percent, with no undercount of a racial or ethnic group larger than 2.5 percent.

However, the mail return rate for the long form (63.0 percent) was considerably lower than that for the short form (76.4 percent). These rates compare with 70.4 percent for the long form and 74.9 percent for the short form in 1990. The gap of 13.4 percentage points overall between short and long form return rates was greater among all non-White races than among Whites by at least 1.5 percentage points. The gap between long and short forms was smaller by the final return rate (9.6 percentage points overall), but the gap was reduced less among all non-White races, except Asians, than among Whites (Stackhouse and Brady, 2002).

PMP evaluation studies were intended to measure the effectiveness of PMP components and activities – to try to attribute the contribution of each to the relative success, as it turns out, of Census 2000. Without an experimental design, it was not easy, and perhaps not possible, to measure these contributions directly, so the evaluation analysis strategy relied on a simple behavioral model, the one underlying the Y&R advertising strategy: in order to participate, individuals must first be aware of Census 2000, they must have positive attitudes about it, and they must be motivated to fill out the Census 2000 form. Attitudes and motivation, in turn, are a function of the information individuals have about the Decennial Census. The PMP attempted to convey the right message, to the right people, at the right time to convince them to respond to the census.

As we shall see, the evaluations largely support the links between awareness and positive attitudes or beliefs, between positive beliefs and intended or reported participation, and between intended or reported and actual participation. Evaluation data indicate that the presence and strength of these links vary by population group. Taken as a whole, the evaluation study data suggest certain conclusions with regard to the effectiveness of the PMP, but are far from conclusive on any front. An attempt to put all of the pieces together in multivariate models did not show any significant main effect of PMP activities on actual mail return behavior.

In the remainder of this chapter, we describe the Census 2000 evaluation studies and discuss their results. Then, we discuss the strengths and weaknesses of the study designs and implementations. Chapter 3 summarizes the discussions and make recommendations for evaluating future Decennial Census Partnership and Marketing Programs.

2.1 Description of the Evaluation Studies

The PMPE survey was conducted in three waves, combining telephone and in-person interviews. The survey was intended to capture census awareness and other factors thought to be associated with cooperation, as well as exposure to messages about the census from a wide variety of sources. Wave 1, with 3,002 completed interviews from a random-digit-dial sample frame, occurred (largely) before the education phase of the advertising campaign. Wave 2 comprised 2,716 completed interviews with a sample selected from the Decennial Master Address File (DMAF) and was conducted during the motivation phase and before the mailout of Census 2000 forms. Wave 3 was conducted after the mailout, during and after the NRFU; the sample was also selected from the DMAF, and 4,247 interviews were completed. The design of each wave included oversamples of hard-to-enumerate population groups: Hispanics, non-Hispanic African-Americans, Asians, Native Hawaiians, and American Indians. Survey instruments included items on "media use; awareness of government agencies and programs; awareness of community agencies and programs; recall of exposure to the mass media; recall of exposure to partnership-sponsored activities; recall about sources of information; knowledge and attitudes about the Decennial Census; aided recall of specific advertising; aided recall of specific partnership activities; Census 2000 mailback form receipt, handling, and mailback behavior; and demographic information" (Wolter et. al., 2002).

The 2000 CMS was conducted weekly during the motivation phase of the advertising campaign and through the mailout/mailback period. It was intended to provide immediate feedback on marketing and mailout activities. The sample was drawn from the InterSurvey (now known as Knowledge Networks) panel, and was conducted through interactive Web TV. The five weekly surveys had sample sizes (completed interviews) of 993, 973, 719, 1,004, and 948 respondents, respectively. Survey content included exposure to and reaction to advertising, census attitudes and awareness, perceptions of, experience with, and action taken with respect to the Census 2000 mailback form, reasons for nonresponse, response intentions, NRFU experience, and recognition of ads played back during the interview (Nie and Junn, 2000).

The Survey of Partners was conducted well after PMP and Census 2000 activities were over, relying on the recall of designated contacts at partner organizations. It was intended to assess the success of the partnership efforts and identify the benefits and contributions of partners and the Census Bureau. The survey was conducted through the mail, with telephone followup, of a stratified random sample of partner organizations drawn from the May 2000 Contact Profile and Usage Management System (CPUMS), including: national and local Federal government organizations; media organizations, sub-classified by race/ethnicity of their target audiences; national and all other for-profit private businesses; national non-government organizations (NGOs); local NGOs, sub-classified by race/ethnicity of their constituencies; and state, local and tribal government organizations. A total of 9,057 interviews was completed. The survey instrument included items on: materials the partners received and used, including how helpful the materials were and the timeliness of their receipt; the relative importance of various partnership goals; the kinds of activities partners engaged in; the kinds of assistance Census staff provided; costs associated with Census 2000-related activities; and characteristics of the partner organization.

The CIS survey was conducted during the Spring of 2000, at the end of the school year in which teachers would have used materials they received as part of the program. The survey focused on whether and how teachers learned about the CIS Program, obtained materials, and used those materials in class, and asked teachers to assess the program and its materials. The survey was conducted through the mail, with telephone followup, of a sample of some 4,000 primary and secondary school teachers. The sample was selected from two sources: a commercial list of teachers and a list of teachers who ordered CIS Program materials. The sample was stratified to allow separate estimates for HTE areas and non-HTE areas. Some 1,046 surveys were completed and accepted for analysis.

2.2 Findings of the Evaluation Studies

This section will summarize the findings of the evaluation studies by topic, following the behavioral model of participation described earlier. We will begin by describing findings with regard to the reach of the PMP activities that were evaluated, then discuss awareness of Census 2000 and exposure to PMP activities, then describe findings with regard to attitudes towards the Census and government in general, and finally cover findings with regard to intended/reported and actual participation. For each topic, we will describe results for the general population and also for the targeted race and ethnic groups. Finally, we will discuss findings with regard to the relative effects of different PMP components and activities across these topics.

2.2.1 The reach of marketing activities

Several evaluation and operational reports describe aspects of the reach of PMP activities. The Partnership Program, the Census in Schools Program, the paid advertising campaign, the media relations campaign, Promotions and Special Events and the Direct Mail Pieces component all helped to spread the word about Census 2000. Several of these components particularly targeted historically hard-to-enumerate population groups and/or geographic areas.

The Census Bureau enlisted about 140,000 organizations in its Partnership Program[1]. Most of these were local in scope, with almost 40 percent operating at a city level and another 26 percent at a county level. The partners were about equally divided between governments and non-governmental organizations. Partnering governments included local, state, and tribal entities. Partnering non-governmental organizations included community-based organizations (29 percent), businesses (22 percent), religious organizations (16 percent), and educational organizations (15 percent). More than half of partners did not target any specific race or ethnic group, while 23 percent targeted Hispanics, 22 percent African-Americans, 11 percent Asians, 7 percent American Indians/Alaska Natives, and 4 percent Native Hawaiians/Pacific Islanders (Westat, 2001).

[1] The Census Bureau counted some 140,000 partners enlisted throughout the Partership Program. The Survey of Partners estimated that almost 86,000 organizations were eligible for the survey after accounting for duplicates in the master list and organizations reporting that they were not partners. Note that the survey occurred some months after partner activities had ended, so the survey estimate may be affected by changes in some partner organizations in the interim.

At least 70 percent of partner organizations reported conducting one or more kinds of activities to publicize Census 2000, educate and motivate constituents, or support Census 2000 operations. Almost one-quarter reported conducting more than ten different kinds of activities. On average, each state[2] had more than 1,100 active and about 400 very active partner organizations. It is not possible to estimate with any precision how many individuals may have been reached by these partners' activities, but the number of active partners is substantial.

About 16 percent of partner organizations spent non-Census funds, either their own or from another source, to promote Census 2000. While there was considerable nonresponse in the Survey of Partners on questions asking for the amount of funds expended, respondents reported some $168 million spent, which is probably a lower bound given the item nonresponse. About one-third of partner organizations reported making in-kinds contributions, such as staff time, office space, and equipment usage. The dollar value of these contributions was estimated at about $374 million (Westat, 2001).

According to the CIS Evaluation report, some 56 percent of teachers nationally had heard of the CIS Program. Among elementary school teachers in HTE areas, a targeted group, 68 percent had heard of the CIS Program, compared with 62 percent in other areas. Among secondary school social studies and math teachers, 44 percent in HTE areas had heard of the CIS Program, compared with 59 percent in other areas (Macro International, 2002). Thus, it appears that the mailing of invitational packets directly to teachers in HTE areas increased awareness of the CIS Program among elementary school teachers, but not among secondary school social studies and math teachers. About 37 percent of teachers in HTE areas and 34 percent of those in other areas reported actually receiving materials. Elementary school teachers were much more likely to report receiving materials (46 percent) than were secondary school social studies and math teachers (30 percent)[3].

An important goal of the CIS Program was to reach families through their children, increasing awareness and knowledge of the census, and ultimately increasing participation. Take-Home Packets were sent to all elementary school teachers and to middle school social studies teachers. About 19 percent of elementary school teachers and 8 percent of secondary school social studies and math teachers sent materials home with their students. Teachers in HTE areas were about as likely (14 percent versus 12 percent) to send materials home as those in other areas.[3]

A Census Bureau assessment of the "How America Knows What America Needs" campaign (Sha and Collins, forthcoming) reported that local and national media coverage of Census 2000 more than doubled that of the 1990 census (in terms of sheer number of news stories). However, according to an independent media analysis commissioned by the Census Bureau (Douglas Gould and Co, 2001), print media coverage of Census 2000 across nine major outlets was down from the level of the 1990 Census. The Gould report speculated that the decline occurred because Census 2000 was less controversial than the 1990 census and because of interest in the Presidential campaign. Important exceptions to the "less controversial" observation were partisan wrangling over adjustment and comments by some politicians about the intrusiveness of the long

[2] Included were the 50 states, the District of Columbia, and Puerto Rico.
[3] These proportions were not presented in the CIS Evaluation report; the authors calculated them from tables presented in the report's Appendix.

form. The discrepancy between the Census findings and those of the Gould report may indicate greatly increased coverage of Census 2000 at the local level. The Gould report also noted that opinion pieces were largely positive, and also that outreach efforts were the subject of 19 percent of the sample articles overall and 36 percent of pre-Census Day articles, up from only 5 percent in 1990.

2.2.2 **Awareness and exposure**

It is clear that awareness of Census 2000 rose dramatically throughout the marketing campaign, at least well into the NRFU phase. During Wave 1 of the PMPE survey, about 65 percent of respondents reported having heard nothing about Census 2000 and fewer than 10 percent reported having heard a great deal. In Wave 2, about 25 percent reported hearing nothing and about the same percentage reported hearing a great deal. By Wave 3, only about 15 percent of respondents reported having heard nothing, and almost half reported having heard a great deal, almost a complete reversal from Wave 1. Awareness increased significantly between each wave for each of the oversampled populations, except that awareness levels for Hispanics may have leveled off between Wave 2 and Wave 3. (Wolter et. al., 2002)

Despite these dramatic increases in awareness measured during Census 2000, peak awareness (percentage having "heard recently") was lower than during the 1990 Census among Hispanics and non-Hispanic Whites, although it was higher among non-Hispanic African-Americans. Awareness as measured in Wave 2 of the PMPE and the 1980 KAP were fairly comparable, although again higher in 2000 among non-Hispanic African-Americans. Comparing the Wave 1 results from 2000 with those from 1980, the 2000 PMPE found somewhat lower levels among non-Hispanic African-Americans and Whites, but higher levels among Hispanics (Wolter et. al., 2002, drawing data from Bates and Whitf[illegible] 1991, and Moore, 1982) . The latter difference may be due to early education efforts aimed at Hispanics in 2000. Wave 1 awareness was much higher in 1990 than either 1980 or 2000, which may in part be attributable to the 1990 Census Awareness and Products Program, which started earlier than similar efforts in 1980 (Fay et. al., 1991) and to the timing of Wave 1 in 1990 as compared with 2000. It may, of course, also be related to other factors, such as a higher level of news coverage of census issues.

The 2000 Dress Rehearsal survey reached a level of "heard recently" similar to that of the PMPE (more than 80 percent), but the pre-campaign 2000 Dress Rehearsal survey awareness levels were lower (28 and 29 percent in Sacramento and South Carolina, respectively) than in Wave 1 of the PMPE survey (35 percent) (Roper-Starch, 1999). It seems reasonable that ambient information about the census would be lower two years before the census.

The CMS, conducted essentially between Waves 2 and 3 of the PMPE survey, showed that the proportion of respondents reporting they had seen or heard "a lot" about Census 2000 from TV commercials rose from 30 percent during the first week of March to 70 percent 3 weeks later. Smaller percentages, but similar proportionate increases, were reported for radio and newspaper advertising (Nie and Junn, 2000). Clearly, the intense motivation phase campaign and the mailout had a substantial effect on awareness.

2.2.3 Attitudes towards the Census

Overall, it appears that positive attitudes towards the census increased significantly during the PMP campaign, but that this increase was tempered by receipt of the census forms, particularly among those who received the long form. Among race and ethnic groups other than non-Hispanic Whites, those who had recently heard about the census were more likely to hold positive beliefs about it than those who hadn't. The following paragraphs provide details of these findings.

The PMPE survey included eight items asking about respondents' beliefs about the census. Using factor analysis to construct and analyze a composite of these items, Wolter et. al. (2002) showed that there was some significant movement of beliefs in the positive direction between Wave 1 and Wave 2, but not between Wave 2 and Wave 3. Every race and ethnic group examined except American Indians showed some increase in positive beliefs over the three waves.[4]

The PMPE survey findings are similar to those of the 1980 KAP survey and 1990 OES. In 1980 (comparable to the PMPE Wave 1 to Wave 2 comparison), favorable responses to three attitude items included in both 1980 and 1990 increased between Wave 1 and Wave 2. In 1990, there was mixed movement between Wave 1 and Wave 2 across six items, with some items increasing and others decreasing. Because recent awareness of the census was relatively high in Wave 1 of the OES, it may be that the appropriate comparison is with Wave 2 to Wave 3 of the PMPE, where there was no net movement.

The CMS included five belief items. The level of agreement with three positive items stayed reasonably constant over five weeks of interviewing, while agreement with two negative items – the census is an invasion of privacy, and my answers could be used against me – increased (that is, beliefs moved in a negative direction) over that period. Martin (2000) modeled the association between hearing about the controversy and negative beliefs, and concluded that the controversy did increase negative beliefs, as did receipt of the long form, and that the effects of these two factors were largely independent.

About 44 percent of respondents in week 5 of the CMS had heard of the controversy, and 9 percent of those said that it made them feel less like returning their Census 2000 form. Virtually all of this 9 percent were people who had received the long form, it appears from data presented by Nie and Junn – almost half of those receiving the long form said that the controversy made them feel less like returning their form[5]. It seems very likely, then, from the findings of both Martin (2000) and Nie and Junn (2000) that the long form controversy had a negative effect on census returns, at least among those receiving the long form, although neither source links hearing about the controversy directly with behavior.

[4] The report includes no item-by-item analysis of movement over time. In retrospect, it would have been useful to have this information available.

[5] In the 1990 OES, almost twice as many long form as short form recipients thought that the census was an invasion of privacy.

The Census 2000 Dress Rehearsal study included nine belief items, with some overlap with both the PMPE and CMS. Eight of the 9 items showed some increase in positive views from before the marketing campaign to after, most significantly, in both Sacramento and South Carolina. Notably, there was no change in either site in the proportion agreeing strongly or somewhat that the census is an invasion of privacy. This finding suggests two interpretations: 1) that this negative belief was not addressed or was not addressed convincingly in the marketing campaign; 2) that receipt of the census mailing alone may not have been the cause of the increase in agreement with the statement found in the CMS[6]. Non-Hispanic African-Americans were significantly more likely than non-Hispanic Whites to agree with each of the three negative beliefs after the marketing campaign, in both sites. In Sacramento, Hispanics were more likely to agree with two of the three negative beliefs than non-Hispanic Whites[7].

Table 3. Significant differences (Chi-square) in census beliefs by recent awareness of the census

Belief	Total Pop.	Hispanic	African-American	White	Asian	American Indian	Native Hawaiian
Filling out the census will let the government know what my community needs	*		*	*	*		*
The census counts citizens and non-citizens alike		*					*
It is important for as many people as possible to participate in the census			*				
My answers to the census could be used against me		*	*		*		*
Answering and sending back the census matters for my family and my community		*	*			*	
The Census Bureau promise of confidentiality can be trusted			*				
I just don't see that it matters much if I personally fill out the Census or not			*		*		*
Sending back your census form could personally benefit or harm you in any way					*	*	

Based on findings reported by Wolter et. al., 2002
*p <.10

For each of the eight PMPE survey items, among some (but not all) race and ethnic groups, people who had recently heard about the Census were significantly more likely to hold positive views than those who hadn't recently heard. Table 3 summarizes the significant differences in percentage of respondents holding positive beliefs about the census by whether they reported recent awareness. While the recently aware had more positive beliefs among almost all groups for almost all items, the patterns of statistical significance vary interestingly by race and ethnic group. Non-Hispanic African-Americans showed the largest number of statistical differences, and non-Hispanic Whites the fewest.

Three of the belief items were included in the 1990 OES, and two of these were in the 1980 KAP survey. The two common items (whether the census promise of confidentiality can be trusted and that the census data can not be used against you) showed increases over time within all three

[6] The level of agreement is also interesting. In the Census 2000 Dress Rehearsal survey and the 1999 KAP1, the levels of agreement were at 20 percent or higher. Early in the CMS they were at 10 percent and went to 20 percent, the "historical norm." Published findings of the 1990 OES show only the percentage giving positive responses, which declined between Wave 1 and Wave 2 (after receipt of the mailout package).
[7] Neither the PMPE nor the CMS report includes comparable information by race/ethnicity.

surveys; the largest increases (12 and 8 percentage points) were between Wave 1 and Wave 2 in 2000.

2.2.4 Intended cooperation

The PMPE survey allows comparison of the change in intended cooperation from before the start of the paid advertising campaign (Wave 1) to after the campaign's education phase (Wave 2). Among all groups except Hispanics (who started at a high level and stayed there) and American Indians (who started at a low level and rose slightly), the level of intended cooperation rose significantly between Wave 1 and Wave 2. The correlation between awareness of Census 2000 communications and intended cooperation rose among all groups between Wave 1 and Wave 2,[8] suggesting beneficial effects from the PMP.

Intended, self-reported, and actual cooperation. Wave 3 of the PMPE survey asked whether the respondent's household had returned the census forms, and for both Waves 2 and 3 information on actual return of the census form was obtained. The correlation between intended and actual[9] cooperation was low, ranging from 0.05 (all correlation values are weighted) for American Indians to 0.27 for Hispanics. Reported cooperation in Wave 3 was more highly correlated with actual cooperation, ranging from 0.30 for African-Americans to 0.42 for American Indians, but the correlations are still fairly low. About three-quarters of Wave 2 respondents who said they "definitely will" return the form actually did so, and about the same proportion of Wave 3 respondents who said they had returned the form had their claim verified.

The relationship between beliefs and cooperation. The CMS asked respondents whether they felt particular messages were "persuasive reasons to fill out the census form." Allocation of federal dollars to communities was viewed as persuasive by about three-quarters of respondents, peaking the week of March 23. Allocation of Congressional seats as a persuasive reason also peaked the same week, at 60 percent of respondents. Identification of mandatory participation as a persuasive reason doubled from March 3 to March 23 (after the mailout, which had that message on the envelope), reaching a peak of 46 percent in the week of April 7[10]. Analysis of the 1990 OES and SCP found that knowing that the census was required by law was the only knowledge item tested that was a significantly better predictor of return than others (Fay et. al., 1991a).

Table 4 summarizes the relationship between beliefs about the census and self-reported participation in Wave 3 of the PMPE survey. For most race and ethnic groups, there is a similar pattern of association between beliefs and self-reported behavior. For Hispanics, however, the only belief significantly associated with self-reported participation is that the census counts both citizens and non-citizens. For American Indians, the relationship between the belief that answers to the census "won't be used against me" and self-reported cooperation is highly significant, while it is not significant among any other group.

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[8] The increase was statistically significant for all groups except American Indians.
[9] That is, returning a census form by April 18.
[10] In the Dress Rehearsal survey, knowledge that the census is mandatory also doubled between the pre- and post-campaign survey rounds, and the levels of knowledge at each period were very close to the early and late levels in the CMS. The 1999 KAP also found that about 22 percent of people knew the census was mandatory.

Table 4. Significant differences (Chi-square) in self-reported census participation by whether positive beliefs reported

Belief	Total Pop.	Hispanic	African-American	White	Asian	American Indian	Native Hawaiian
Filling out the census will let the government know what my community needs	*		*	*	*	*	*
The census counts citizens and non-citizens alike	*	*		*	*		
It is important for as many people as possible to participate in the census	*		*	*	*	*	*
My answers to the census could be used against me						*	
Answering and sending back the census matters for my family and my community	*			*	*	*	*
The Census Bureau promise of confidentiality can be trusted							
I just don't see that it matters much if I personally fill out the Census or not	*		*	*	*	*	*
Sending back your census form could personally benefit or harm you in any way							

Based on findings reported by Wolter et. al., 2002
*p <.10

Note that the three items related to privacy and confidentiality in Table 4 ("My answers to the census could be used against me," "The Census Bureau promise of confidentiality can be trusted," and "Sending back your census for could personally harm you in any way [sic]") show no significant association with participation, with one exception—American Indians were less likely to report returning the census form if they believed the census could be used against them. Fay et. al. (1991a) examined the relationship between an index of three privacy/confidentiality items and return of the census form using the 1990 OES and 1980 KAP. In 1990, those with positive attitudes on all three items were significantly more likely to return the census form (by both self-report and matching actual behavior, while there was no difference in 1980 (only self report was examined). Similar findings were reported by Kulka et. al. (1991). Martin (2000), in an analysis of 2000 CMS and 1990 OES data, found "several indications that Census 2000 engendered more sensitivity and a more diverse privacy reaction than the previous census." Martin noted, as had Fay et. al. (1991b), that privacy and confidentiality are multi-faceted concepts for the public, with complex inter-relationships that may change over time and in response to particular stimuli (such as receipt of the census form or hearing about the long form controversy in 2000). Thus, the relationship between these concerns and return of the census form in 2000 may warrant further exploration before simply accepting the findings for these three items as summarized in Table 4.

2.2.5 The overall relationship between census communications and actual cooperation

Wolter et. al. (2002) fitted a series of multivariate models in an attempt to show the relationship between PMP activities and actual mail return behavior. They concluded, "the . . . data are consistent with the hypothesis that mass media and community-based communications had no effect on the odds of a mail return for the Asian, American Indian, and Native Hawaiian populations. . . . The data support a conclusion that census communications were less effective for the other-language population than for the English population." These conclusions could certainly be termed disappointing. However, the incremental increase in return rates overall due to the PMP is likely to be relatively small (on the order of 5 percentage points or less), there are many confounding factors that were unable to be included in the models (e.g., news stories on the census, conversations with friends and family, and the innumerable influences on individuals' mood and behavior that arise every day), and measurement of the explanatory factors may be subject to various types of error (e.g., comprehension of survey questions, recall of messages or behavior, identification of the correct household respondent). Thus, the multivariate analysis should not necessarily be taken as evidence that there is not a relationship between mail return behavior and PMP activities, just as an indication that this particular method of exploring the relationship (assuming it exists) is not finely tuned enough to detect it.

Bentley (2003) conducted an auxiliary evaluation of the relationship between PMP activities and Census 2000 return rates. Using county-level return rates, a variety of indicators of PMP activities by geographic area, and other control and explanatory variables, Bentley constructed a series of statistical models in the same spirit as those developed by Wolter et. al.. Essentially replicating the Wolter et. al. results, he detected no relationship between the intensity or nature of PMP activities and county-level return rates. Bentley cites a number of limitations of his analysis, notably the lack of an experimental design in the PMP. Again, the fact that no relationship was detected does not demonstrate that a relationship does not exist.

Neither of these modeling efforts could include consideration of the effects of the advance letter and mandatory notice on the questionnaire outer envelope, since these features were included for all households. Tortora et. al. (1993), commenting on the likely effects on return rates in Census 2000 of the various mail piece innovations, noted:

> "In the past, the Census Bureau has obtained somewhat lower response rates in noncensus years than in census years . . . The usual explanation for this difference is 'census climate', a succinct explanation of the combination of media attention, advertising, and cultural sense of participation that seems to build during each census year . . . We do not know whether the existence of a 'census climate' will substitute for the effects of these elements or add to the response likely to be obtained in a census year."

In fact, this is the question that remains unanswerable. The modeling efforts of Wolter et. al. and Bentley tried to correlate return rates and different levels of intensity of "census climate" as stoked by the PMP, and could not detect a relationship. The mail piece innovations may be the key elements that stemmed the ebbing tide of return rates, but there is no direct statistical evidence to support that contention. One small argument for the mail pieces is presented by

Dillman et. al. (1996). The 1994 field test combined three motivational appeals: a statement that response was mandatory, statements about the benefits of participation, and varying levels of assurance of the confidentiality of responses. The latter two kinds of appeal could be thought of as elements in the general category of "census climate" features, although weak ones. The effects of the mandatory statement dwarfed any effects the other appeals had on return rates.

2.2.6 Disaggregating the effects of PMP component activities

If a direct link between the PMP and mail return behavior cannot be demonstrated statistically from the available evaluation data, one would certainly not expect to find evidence of the direct effects of individual PMP components. The evaluation studies do provide some indirect insights into the relative success of the components, however.

The PMPE measured awareness of census information from a variety of mass media and community-based sources in each of its three waves. Awareness of mass media (television, magazine, radio, newspaper, and billboard) messages increased significantly each wave among most race and ethnic groups, with the exception of magazine awareness, which did not increase significantly between Wave 2 and Wave 3. Television had the highest mean awareness among all groups, with radio and newspapers next. The Census 2000 Dress Rehearsal study found the same ranking among mass media in respondent awareness. In the CMS, more than twice as many people reported seeing or hearing "a lot" about the census in TV commercials as in radio or newspaper advertisements. Reported exposure more than doubled for each medium between the weeks of March 3 and March 31, then leveled off for the final week.

The PMPE did not distinguish between advertising and news when asking about mass media, but the CMS did, although it is not clear whether respondents would consistently be able to make this distinction. Exposure to news stories about the census on television, on the radio, and in newspapers was somewhat lower (in the case of television almost half) than to advertising in the same sources. As with advertising, news exposure increased steadily for the first four weeks, then leveled off for the final week.

In the PMPE, community-based sources that reached about the same levels of awareness as some of the mass media were informal conversations, census job announcements, signs or posters inside buildings, and articles. Awareness of each of these sources increased between Wave 1 and Wave 2, but only informal conversations and signs or posters increased significantly between Wave 2 and Wave 3. Very similar patterns of awareness were found among all race and ethnic groups. None of these sources was included in the CMS. Speeches by government or local leaders had the highest exposure rate among the community-based sources included in the CMS, and their exposure increased steadily over the survey period. Religious groups, local community or government organizations, "things children brought from school," and school-related activities had lower and fairly constant levels of exposure during the survey period. While awareness of messages from these sources was also at lower levels in the PMPE survey, awareness increased significantly between Wave 1 and Wave 2 for each of them, less so between Wave 2 and Wave 3. The remaining sources included in the PMPE survey, conference exhibit booths, the Internet, paycheck or utility bill inserts, and participation on complete-count committees, had the lowest levels of awareness throughout and exhibited some increases across waves.

In Wave 3 of the PMPE survey, about 12 percent of respondents said they had heard "a little" about Census 2000 from materials their children brought home from school, and about 3 percent reported hearing "a lot." While it is impossible to compare estimates of the reach of the CIS Program between the PMPE and the CIS Evaluation with any precision, these numbers are not inconsistent with the CIS Evaluation figures cited earlier. In the Census 2000 Dress Rehearsal survey, non-Hispanic African-Americans (in South Carolina) and Asians/Pacific Islanders (in Sacramento) reported more exposure to school-based sources (their own or their children's schools) than did non-Hispanic Whites. In the PMPE survey, all other race and ethnic groups reported more exposure to school-based sources than did non-Hispanic Whites, although the statistical significance of the difference cannot be determined from the published report.

Wolter et. al. also compared the correlation between intended participation and awareness of mass media and community-based communications in Wave 1 and Wave 2. For mass media, the correlations increased significantly between waves for the general population, Hispanics, non-Hispanic African-Americans, non-Hispanic Whites, and Native Hawaiians. For community-based communications, the correlations increased for all of the same groups except Hispanics. The correlations between awareness of both kinds of communication and intended participation rose for Asians, but not significantly, and did not rise for American Indians. The CMS asked whether the advertising (or news) exposure "make me feel more like taking part" in the census. For each, "yes" responses rose sharply between March 3 and March 10, then dropped off slowly. Overall, about half of respondents said "yes" for advertising and for news reports.

The Survey of Partners identified what activities partnering organizations conducted, but most of these activities cannot be directly related to items in the PMPE survey or CMS. Vehicles for communication with target audiences included printing and distributing materials (37 percent of partners), using print media (34 percent), holding public and in-house meetings (33 percent), distributing census promotional items at meetings and events (30 percent), sponsoring local media coverage (19 percent), and including messages in utility bills, phone cards, etc. (13 percent) (Westat, 2001).

Finally, Wolter et. al. examined the association between awareness of various information sources and actual return behavior across the 1980 KAP survey, 1990 OES, and the PMPE survey's Wave 2 and Wave 3. They found no consistent pattern of association across the three studies and four data points, although there was variation within each.

2.3 Discussion of Individual Evaluation Studies' Strengths and Limitations

The studies commissioned to evaluate the Partnership and Marketing Program for Census 2000 represent the most comprehensive effort of this kind to date. The three major studies complement each other well. The PMPE provides the largest amount of information related to the final outcomes of interest – increasing or at least slowing the decrease in mail return rates, and reducing the differential undercount of various race and ethnic groups. The privately-funded CMS provides a "pulse-taking" look at what happened during the peak period of the PMP week by week, which the PMPE was not designed to do. The Survey of Partners supports more of a

process evaluation for one component of the PMP than an outcome evaluation. We will discuss each study in turn. The following section discusses evaluation issues that span the studies.

2.3.1 Survey of Partners

Of the three Census-commissioned evaluations, this study was most process-oriented. It provides a good quantitative assessment of the number and level of involvement of active partners. The Survey of Partners did not attempt to measure person-level outcomes in terms of awareness, beliefs, or participation in Census 2000, even though the ultimate goals of the Partnership Program were very much linked with those of the advertising campaign and other PMP activities. In fact, one of the objectives of the PMP model was to reduce resistance to the census among the hardest to enumerate to "pave the way for community programs," which would likely have come via the Partnership Program. The decision not to attempt to measure such outcomes retrospectively was probably a good one. However, it might be possible in future evaluation efforts to measure the "reach" of partners prospectively, using a community case study approach.

2.3.2 Census in Schools Evaluation

This survey-based evaluation provided more detail on the effectiveness of one major component of the Partnership and Marketing Program, an attempt to introduce Census 2000 into the classrooms of the country's elementary and secondary schools. Like the Survey of Partners, it too is more of a process than an outcome evaluation, useful for assessing the implementation of the program rather than its effect on Census 2000 return rates.

2.3.3 PMPE Survey

The three-wave (baseline, pre-census, post-census) survey design was employed to address the target populations in manners most appropriate to their circumstances. A mixture of telephone and in-person survey modes was used to ameliorate the difficulties in sampling and surveying some hard-to-count populations. In the first wave, the expected sample frame, the Decennial Master Address File (DMAF), was not available so a random-digit-dial (RDD) approach was implemented for surveying the general population and oversamples of Hispanics, non-Hispanic African Americans, and native Hawaiians. As described in more detail below, the Wave 1 response rate was lower than the Wave 2 and 3 administrations, which used the DMAF.

Limitations of the design include issues of sampling error, nonresponse, frame undercoverage, and response error. Appropriate adjustments and caveats were used in the analysis and reporting, and are noted in this report where applicable. For one of the more problematic populations, American Indians, the conclusion drawn is that undercoverage "…should be comparable to that achieved for this population in the Census 2000 itself." (Wolter et. al., 2002, p. 10)

One limitation of the evaluation was particularly highlighted by the authors: the inability to clearly and separately quantify the effects of the mass-media campaign and effects of the partnership program. Due to the variety of potential influences possible from the two programs, as well as other census-related stimuli (e.g., news reports, etc.), the time periods covered, and known problems in respondent recall precision, the separation of effects was seen to be a

daunting task. For this quantification, an experimental approach was recommended in future evaluations.

Some specific comments on the PMPE (others will be incorporated in topic areas below):

- While the PMPE survey included questions specific to messages in the advertising campaign, analysis of these items was not included in the report. There were also intended to be somewhat different messages in different phases of the campaign—it is not clear from the materials provided what these variations were, nor whether the variations were covered in the PMPE questionnaire, which had the same content regarding messages in each Wave.
- It would have been instructive for the analysis of the relationship between beliefs about the census and reported participation to have been extended to (or replaced by) the same assessment using actual participation.
- The factor analysis of PMPE belief items and the use of a composite belief variable was illuminating. However, for comparison with previous research further item-by-item analysis would have been helpful. It is also not clear whether the lack of movement in the belief composite between Wave 2 and Wave 3 could have been due to the performance of particular items, notably the negative beliefs stimulated by the negative long form publicity.

2.3.4 Census Monitoring Survey

While not a census-sponsored evaluation activity, this study provided very interesting and useful week-by-week snapshots of the populations' reactions to the PMP and the mailout/mailback operation. The CMS provided the flexibility to respond to breaking events, such as the controversy over the long form, perhaps its most valuable contribution in 2000. Unfortunately, two planned components of this effort, additional rounds of interviewing into the NRFU period and collection of actual return behavior, apparently did not happen. These features would have provided additional useful insights.

The CMS is a complement to the PMPE, and an entirely different kind of survey. While the effective response rates are somewhat lower to considerably lower than those of the PMPE survey waves, its temporally fine-grained view of the effects of the advertising campaign can't be replicated in the PMPE style of survey design without compromising the response rate, which depends on repeated contacts over a period of several weeks.

2.4 Cross-study Evaluation Topics

2.4.1 Experimental Design

The studies evaluating the effects of the Partnership and Marketing Program and the Census 2000 Dress Rehearsal were observational. The limitations of observational designs in the establishment of cause and effect are clearly stated in the NORC report on the PMPE (also see Cook and Campbell, 1979). (NORC's final recommendation is to include an experimental design in future evaluations.) From an evaluative perspective, it certainly would be easier and

less ambiguous if it were possible to partition people into real-world groups receiving measured doses of advertising and/or exposure to partnership activities. Classical (e.g., agricultural) experimental designs have the power of controlling sources of variation and so allow the establishment of causation and the quantification of effects. An experiment might eliminate possible confounding of mass media and Partnership activities. Indeed, people included in such an experiment would not even have to report exposure to such activities. Activity and exposure levels would be set and known.

We do not think, however, that it would be feasible to design a meaningful experiment for the evaluation of the effects of mass media on awareness and behavior. By its very nature, mass media is "out there" for all to see so the control of its reach and frequency for selected groups is at least problematic if not actually impossible. It is difficult to imagine successful control of media outlets in a manner that would allow selection of differential doses for selected groups in the same way that soil Ph and moisture might be controlled in a classical experiment.

Designing an experiment evaluating the effects of the Partnership Program is more conceivable, although any such design would likely still be confounded by the mass media campaign. Partnership activities could be restricted to selected geographic areas so that experimental and control groups could be established. This would not establish the dose or mix of treatments received, however, for surveyed individuals (and recall, as noted above, can be a poor indicator). Although perhaps somewhat more tractable, it would also be difficult to select initially comparable experimental groups for treatments. At the least, such groups would have to have comparable baseline attitudes and knowledge of the census and similar patterns of census form return.

2.4.2 Timing of the evaluation activities

The PMP was carefully designed to build over time to a peak just before and during the mailout/mailback operation, and to re-energize for the NRFU operation. The evaluation activities were designed around the PMP and Census 2000 operations. Wave 1 and Wave 2 of the PMPE were well positioned to capture the effects of the Education phase of the paid advertising campaign. Wave 3's position does not allow such a clean look at a particular part of the PMP: between Wave 2 and Wave 3 was the Motivation phase of the advertising campaign and the mailout/mailback operation. The NRFU effort and the associated advertising campaign were active while Wave 3 was in the field. The quantity and volume of ambient information about the census also peaked during the period between Wave 2 and Wave 3, and into the Wave 3 field period. Finally, the Wave 3 field period extended almost a month after the end of NRFU activities, which may have resulted in increased recall error for the later interviews. It is thus impossible for the PMPE to disentangle the effects of these different events, but it does provide useful information on the cumulative effects of all of the influences on census behavior.

The CMS fit nicely into the gap between the PMPE's Wave 2 and Wave 3 to offset the limitation just described. The week-by-week design allowed tracking during the peak period of PMP activity. Unfortunately, since the planned last two weeks of the CMS, during the NRFU, apparently did not happen, there is no way to isolate the effects of the NRFU phase of the advertising campaign.

The major shortcoming of the Survey of Partners was the timing of the field period, many months after Census 2000 operations. Some contact persons at partner organizations had left the organization, and others had difficulty recalling details of their involvement. Thus, the survey probably underestimates somewhat both the number of active partners and the level of involvement of active partners. About one-quarter of sampled organizations from the Census Bureau's database were never contacted during the survey, despite multiple attempts both through the mail and over the telephone. The timing of the survey undoubtedly contributed substantially to this low rate of contact.

2.4.3 Civic activities

Because the Y&R model of response likelihood was based on the assumption that general civic participation would be correlated with returning the census form, it might have been useful for the PMPE to have put somewhat more emphasis on civic participation in its design and analysis. The PMPE questionnaire for each wave included seven questions on civic participation. Given the distribution of responses in the PMPE survey (Wolter et. al., 2002, Figure 16) compared with the Y&R estimates (Wolter et. al., 2002, Figure 1) it seems likely that the Y&R model was based on more items. Thus, it is probably not appropriate to compare the two sets of estimates. Two points are worth noting, however. First, the level of no civic participation in the general population in the Y&R model (17 percent) is almost identical to that found in the PMPE survey in Wave 1 and Wave 2. Second, the distribution of amount of civic participation drops in Wave 3, with those with no activities increasing to about 25 percent and those with three or more activities dropping from about 24 percent to about 10 percent[11]. The decrease in civic participation (of those reporting at least one activity) between Wave 1 and Wave 3 is statistically significant for the general population, for non-Hispanic African-Americans, and for non-Hispanic Whites. The PMPE report does not explore any possible relationship between this difference in civic participation across waves and any of the findings with regard to awareness, beliefs, or behavior.

The few findings presented in the PMPE report relating to civic participation provide only very limited support for the Y&R likelihood model. There were significant differences (in the expected direction) in recent census awareness by level of civic participation for the general population, for non-Hispanic African-Americans, for Asians, and for American Indians. There were similar but non-significant differences for Hispanics, non-Hispanic Whites, Asians, and Native Hawaiians. None of the final multivariate models described in the report found a significant relationship between civic participation and intended or actual participation (when controlling for other factors). While there may have been a positive correlation between civic participation and returning the census form, other factors would appear to explain that correlation if it exists.

2.4.4 Survey nonresponse

[11] Wolter et. al. suggest that seasonality may explain this difference, perhaps with a reduction in PTA participation as the summer approached, but were unable to test this hypothesis. Since the questionnaire asks about participation in the past 12 months, this explanation seems unlikely.

The response rates for PMPE Wave 1, Wave 2, and Wave 3 were 48.4 percent, 64.5 percent, and 67.7 percent, respectively. Wolter et. al. acknowledge that nonresponse is a potential source of bias in the findings. Generally, nonresponse bias is more likely when variables of interest are correlated with the propensity to respond to the survey. Intuitively, one would expect a correlation between responding to a telephone or in-person survey and mailing back the census form. Thus, there is reason to be concerned about nonresponse bias in the PMPE survey and others that seek to evaluate the effects of PMP or other activities on the census return rate.

Table 5 shows the final weighted and unweighted return rates for participants in Wave 2 and Wave 3 of the PMPE survey and corresponding final return rates[12] for the population as a whole. For Whites and American Indians, the rates are reasonably comparable, but for Hispanics, African-Americans, and Asians the survey respondent return rates are 10 or more percentage points higher than the population rates. Some of this difference may be due to the effects of the survey, in essence acting as a motivating factor. However, by extrapolation, within these race and ethnic groups survey nonrespondents had a 50 percent or lower final census return rate, indicating that there is some other systematic difference between respondents and nonrespondents in these groups. While it is impossible to know what the bias would be, we surmise that some of the differences between the White and other populations in awareness, beliefs, etc., would have been even greater had there been no survey nonresponse. Note that the weighted return rates for survey participants are generally higher than the unweighted rates, so the weighting does not ameliorate the apparent bias.

[12] We use final return rates rather than the rates through April 18 because of discrepancies in the difference between the 4/18 and final rates in the Wolter et. al. report and for the U.S. population.

Table 5. Final return rates for PMPE Wave 2 survey respondents by sample and for corresponding groups in the general population

	Final return rate					Difference†† between respondents' and non-respondents' final return rates
	Unweighted*	Weighted*	Census 2000 final return rate**	PMPE Survey response rate*†	Estimated final return rate for survey non-respondents***	
Wave 2						
Total Population	81.1%	84.4%		57.8%		
Hispanic	81.9%	81.7%	69.2%		51.8%	30.1
African-American	74.8%	76.6%	64.3%		49.9%	24.9
White	87.1%	87.1%	86.8%		86.4%	0.7
Other	79.0%	79.3%				
Asian	88.5%	89.8%	74.6%	72.2%	38.6%	49.9
American Indian	72.3%	74.7%	70.7%	71.2%	66.8%	5.5
Native Hawaiian	76.8%	79.2%	59.4%	73.0%		
Wave 3						
Total Population	80.1%	80.9%		64.6%		
Hispanic	83.5%	89.2%	69.2%		47.6%	35.9
African-American	73.5%	74.6%	64.3%		50.4%	23.0
White	83.9%	81.7%	86.8%		91.1%	-7.2
Other	79.0%	60.9%				
Asian	88.3%	85.3%	74.6%	55.6%	35.5%	52.9
American Indian	69.2%	71.1%	70.7%	74.6%	74.3%	-5.1
Native Hawaiian	76.1%	78.0%	59.4% †††	72.6%		

*Source: Wolter et. al. (2002)
**Source: Stackhouse and Brady (2002)
†"Unweighted response rate 3" from Appendix B
***Calculated from unweighted return rate, Census 2000 final return rate, and PMPE survey response rate
†† Difference in percentage points
††† U.S. population value is for Pacific Islanders

Martin (2001) discussed the response rates and potential for bias in the CMS. The response rates for the five weekly CMS surveys ranged from 58 percent to 83 percent. However, the sample frame for these surveys was the InterSurvey panel, recruited using an RDD sample design. The combined response rate thus averaged around 30 percent, considerably lower than the rates for the PMPE. Martin made the following observations about the potential for bias in the CMS:

- The demographic composition of the samples match reasonably well with that of the Current Population Survey, except that the CMS under-represents those with less than a high school education and over-represents voters;

- Likely biases are in Census 2000 participation rates (participation is highly correlated with voting) and concerns about privacy (nontelephone households are not included in the CMS samples, and households with unlisted numbers are under-represented);
- Any biases that are present are more likely to affect estimates of levels, and less likely to affect trend estimates, since the bias should be relatively constant over the surveys.

The Survey of Partners achieved an overall response rate of 68 percent. The refusal rate was only about 7 percent; most nonresponse was due to difficulty in contacting partner organizations. As noted earlier, this difficulty was likely due in part to the timing of the survey, and probably resulted in under-estimating partner participation in Census 2000 activities, since, for example, some contact staff responsible for census-related activities were no longer with the partner organization.

Nonresponse could be a serious issue for the CIS Evaluation survey, although it perhaps is of less concern from a process evaluation perspective than from the perspective of producing population estimates. Only 28 percent of the sample returned questionnaires, and 26 percent were ultimately included in the analysis. As noted by the report's authors, "Our expectation is that teachers who did not hear of the program or did not use the CIS materials were less willing to respond to the survey." This intuitively reasonable observation suggests that the survey may over-estimate awareness of the CIS Program and use of its materials. The fact that the response rate among teachers sampled from the orderers' list (32 percent) was only a little higher than that among those sampled from the commercial list (27 percent) provides some reassurance about this potential for bias, however. Nonetheless, one should interpret level estimates with caution. It is less clear how non-response may have affected comparisons, such as between HTE and non-HTE areas.

2.4.5 Language spoken at home

One important area where nonresponse may be an issue is with linguistically isolated individuals. Of the various studies evaluating the PMP, only the PMPE survey has much to say about such people. The survey was conducted in English and Spanish. Some number of households were not screened, and some number of interviews were not conducted, because of language barriers.[13] We cannot tell whether translators or proxy interviews were allowed for languages other than Spanish, but some number of interviews were conducted where a language other than English was spoken at home.

Total nonresponse due to language and incapacity in Wave 1 ranged from about 2.5 to 3.5 percent in the core, American Indian, and Asian samples, and was about 9 percent in the Native Hawaiian sample. In Wave 2, it was between 2 and 2.5 percent for the core, Asian, and Native Hawaiian samples. In Wave 3, it was about 2.5 percent for the core, 4 percent for the Native Hawaiian sample, and 9 percent for the Asian sample. There was virtually no nonresponse for these reasons in the American Indian sample in Waves 2 and 3.

"Language spoken at home" was used several times as an explanatory variable in the PMPE report, broken down as English, Spanish, and Other. The findings include:

[13] Language problems and "incapacitation" were counted together in the PMPE report, Appendix B.

- Awareness of census communications increased significantly for all languages between Wave 1 and Wave 3, but less so for Spanish and Other than for English;
- The correlation between awareness of census communications generally, and of mass media communications, and intended participation increased from Wave 1 to Wave 2 about the same for English, Spanish, and Other language spoken at home;
- The correlation between awareness of community-based communications and intended participation did not increase significantly for Other, while it did for English and Spanish in the core sample and for English in the Native Hawaiian sample;
- In the multivariate analyses, households speaking an Other language at home were significantly more likely to return their census forms than were English-at-home households.

The last finding in particular is counter-intuitive; one would expect linguistically isolated households to have a lower return rate. The authors discount the findings about Other-language households because of small sample sizes. However, nonresponse bias may be particularly acute here—truly linguistically isolated households (other than those speaking Spanish) would apparently not have been able to complete the survey.

3. SUMMARY OF RESULTS

Through its continuing program of methodological research and innovation to improve the census, the Census Bureau was able in Census 2000 to reverse the downward trend in mail return rates and reduce the differential undercount. The combination of several major evaluation efforts for the Census 2000 Partnership and Marketing Program provides much insight into the effects of the PMP, and the connection between the PMP and the other successes is intuitively compelling. However, the grand prize of the evaluation activities, a direct connection between the PMP interventions and return rates, remains elusive.

Here is what we believe we can say with confidence from the evaluation data we have examined:

- The mandatory notice on the questionnaire's outer envelope had a positive effect on return rates.
- The Partnership Program and the Census in Schools Program were relatively successful in reaching out to hard-to-enumerate populations, as evidenced by the kinds of constituencies active partners reported in the Survey of Partners and by the levels of awareness and use of materials reported in the CIS evaluation survey, although it is not possible to quantify their impact in terms of number of individuals reached or increases in participation rates.
- The PMP, and the paid advertising program in particular, dramatically increased awareness of the census among the general population, and among certain traditionally hard-to-enumerate race and ethnic groups.
- Print media coverage of Census 2000 nationally was much broader than in 1990, and probably more positive in tone overall.
- The PMP increased the proportion of positive beliefs about the census up to the time of the mailout.
- The effects on proportion of positive beliefs vary by belief and by race and ethnic group.
- Some positive beliefs about the census are associated with increased reported participation, and the association varies somewhat by race and ethnic group.
- Organizations including many targeting traditionally hard-to-enumerate populations, conducted a large number of activities in support of Census 2000, with cash and in-kind contributions exceeding $500 million.

The following statements are indirectly supported by the evaluation data or other research:

- News stories about politicians saying that the long form is an invasion of privacy had a negative effect on return rates for the long form; CMS data are persuasive on this point.
- The advance letter is likely to have had a positive effect on response rates.
- The respondent-friendly questionnaire design is also likely to have had a positive effect, and the effect may have been greater in hard-to-enumerate areas.
- Receipt of the mailout package, particularly the long form, may have increased some negative beliefs about the census.

- Nonresponse to the PMPE and CMS probably results in an underestimate of the differences between the non-Hispanic White population and the Hispanic, non-Hispanic African-American, and Asian populations.
- Nonresponse to the PMPE and CMS also results in an underestimate of the differences between English-speaking and linguistically isolated households in awareness and behavior with regard to the census.

4. RECOMMENDATIONS

It is very hard, if not impossible, from the statistical evidence to attribute the relative success of Census 2000 to the PMP or its components. The fact remains that Census 2000 was much more successful than predicted, and more successful than the 1990 Census. It seems reasonable to take the view that a number of changes were made, many incorporated into the PMP, and overall they were successful. Thus, it seems reasonable that this successful strategy should be continued, with refinements that appear warranted in the spirit of continuous improvement.

It is very likely that including the message that participation is required by law on the mailout envelope had a positive effect on return rates, and should be continued. An experimental test of this message in a noncensus year increased returns by about 10 percentage points overall. Otherwise, we do not feel that the data warrant recommendations about continuing specific aspects of the PMP or not.

The lack of an experimental design was a principal reason for not being able to associate the return rate success of Census 2000 with PMP components. It does not seem sensible to embed an experimental design in a decennial census, but it may be possible to do so in a dress rehearsal or field test carried out in discrete geographic locations. In particular, it would be instructive to vary the PMP or "census climate" factors as a whole against different features of the mail pieces.

The data accumulated over three censuses should be able to provide guidance on what beliefs about the census (a) are associated with return propensity and (b) can be influenced by marketing and communication efforts, differentially by race and ethnicity. We recommend that the next marketing and communication campaign review these findings to identify particular messages to include for particular segments of the population.

Given that general civic participation does not seem to be a primary factor in return propensity (although the two may be correlated), we recommend a review of the Y&R model to see how its segmentation strategy might be different if other factors were used as the basis.

We recommend a review of PMP activities, including the segmentation strategy, to assess how they might better reach younger adults and those who speak languages other than English and Spanish at home. New formative work for these groups may also be warranted.

Regarding evaluation activities for the next census, we recommend continuing PMPE- and CMS-type surveys. We recommend extending the CMS to go into the NRFU period, assuming that activities targeted to the NRFU remain a part of the PMP, and obtaining actual participation information on CMS households to include in the analysis. It would be desirable for Wave 3 of the PMPE to coincide more closely with the NRFU period (i.e., rather than extending beyond it), although a truncated field period would undoubtedly lower the response rate somewhat.

While desirable, it is unlikely that the next survey would be any more successful than the 2000 PMPE at connecting the PMP or its components directly with return behavior. We recommend that the analysis of the next PMPE survey focus more on the marketing strategy itself and its messages, with an eye toward continuous improvement.

The Survey of Partners was a useful process evaluation, and should provide some guidance in planning and implementing a future Partnership Program. If the survey is repeated, it should be integrated into the overall schedule so as to be fielded as soon after partner activities subside as possible. It would also be helpful to provide partners with some of the evaluation questions during the Program activities, so more (and more reliable) quantitative information would be available for the survey.

If funds are available, new kinds of evaluation activities might be useful. For example, it may be possible to do more comprehensive evaluations at a local level, using ethnographic and/or other qualitative methods as well as surveys and other quantitative methods[14]. A locally-based "case study" approach could begin to quantify, for example, the reach of local and national partner activities or local media relations efforts. It could also assess influences on the behavior of linguistically isolated households more efficiently than a national survey. Combining qualitative and quantitative methods locally would also provide more depth to the analysis, helping to make causative connections not possible with broad quantitative data alone.

[14] Census 2000 activities included ethnographic research, but not specifically to help evaluate the PMP.

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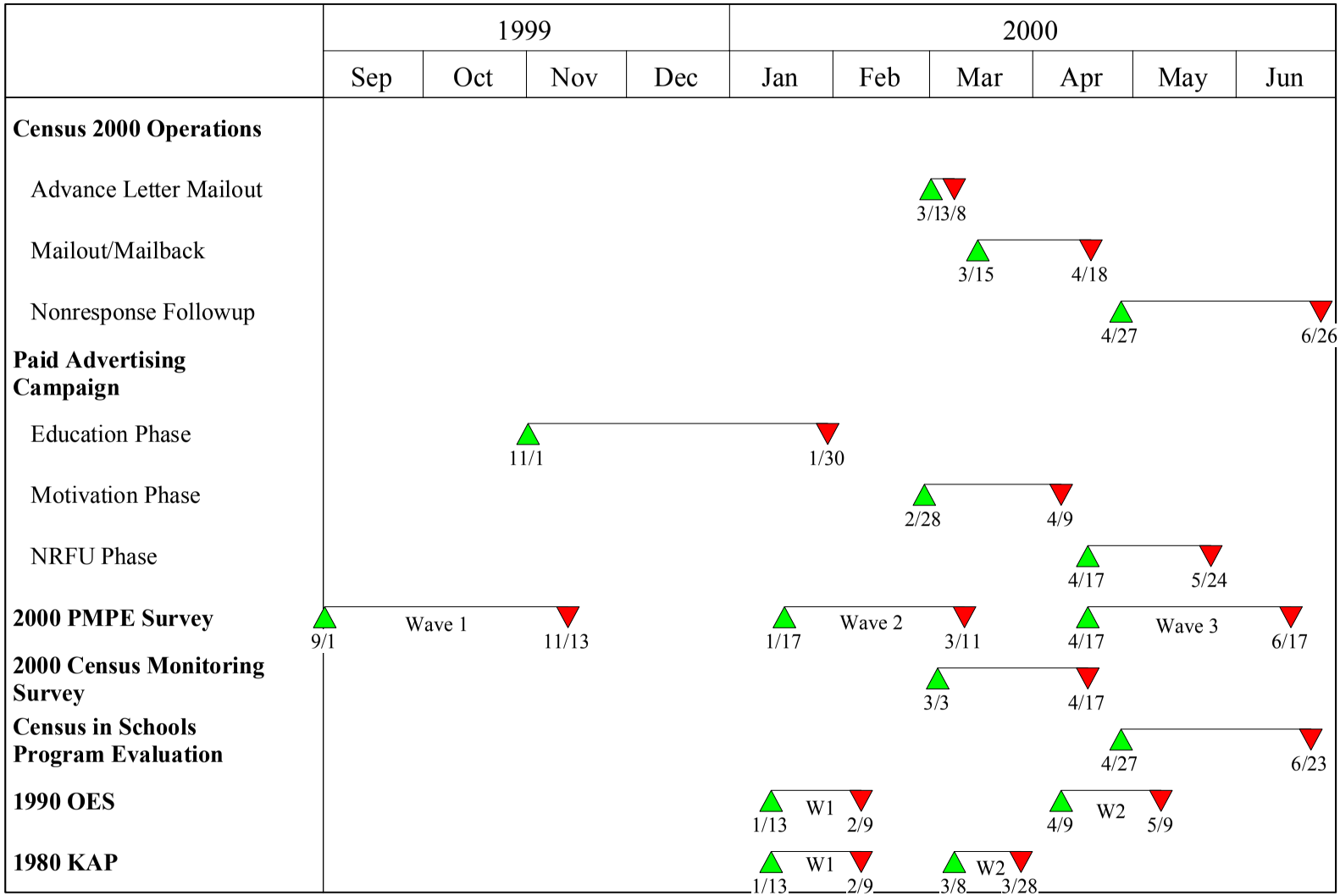
Figure 1. Schedule of Census 2000 Operations, Paid Advertising Campaign, and Evaluation Activities



Note: The Partnership Program began well before and extended throughout the time frame shown here. The Survey of Partners is not included in this figure since it occurred substantially later than this time frame.